Spring 2011

ISSN 1496-3876

Connections

www.cmpt.ca | CMPT QUARTERLY ON-LINE NEWSLETTER | Volume 15 Number 1

CMPT at CACMID in Montreal

Last April, Dr. Noble had an opportunity to attend the Canadian Association for Clinical Microbiology and Infectious Diseases (CACMID) and AMMI-Canada (formerly the Canadian Infectious Diseases Society and Canadian Association for Medical Microbiology) conjoint meeting in Montreal, QC.

The CACMID is a long standing conference in Canada running for over 75 years and for the last 18 years CMPT (and more recently its sister program POLQM) has hosted a Laboratory Quality Seminar series.

This year the theme for this seminar was "**Communicating Quality**" and its main objectives were to learn the relationship between culture and quality, understand the communication opportunities offered by conventional and electronic media, identify quality education opportunities, and understand what works and what doesn't in Quality communication.

For more information and details you can go to www.DarkDaily.com or read Dr. Noble's blog entry at www.medicallaboratoryquality.com. If you would like to see the presentations, they are available at www.polqm.ca

CMPT has a long tradition of presenting research information at the meeting. This year, we presented information from a research project in which we collaborated with colleagues from the Ear, Nose and Throat Department at UBC. The title of the presentation was "**Biofilm Susceptibility of *P.aeruginosa* Isolated From Patients with Otitis Media to Ciprodex®, Ciprofloxacin and N-Acetylcysteine**."

Chronic otitis media and cystic fibrosis are characterized by infection and colonization with bacteria that readily produce a thick sticky colony formation known as biofilm. Biofilm formation results in bacteria that are able to survive in an amorphous muck which is poorly penetrated by antibiotics. Within this biofilm, bacteria are in a metabolically reduced state so that even when antibiotics do get in, bacteria are poorly responsive. This leads to chronic infections which are very difficult to treat.

Over the last 20 years, interest in this microbial state has been growing. Today, there are methods to recover and grow biofilm-producing bacteria, and methods to do susceptibility testing. These methods are mainly for research purposes but are moving towards more common clinical application.

Recent studies have demonstrated that the common chemical detergent N-acytyl cysteine (NAC) can disrupt biofilms, and could potentially be used in the treatment of chronic infections by biofilm-forming bacteria.

In our study, we looked at the effect of N-acetyl cysteine on the susceptibility of biofilm-producing *Pseudomonas aeruginosa* to ciprofloxacin alone and in combination with corticosteroids.

The results of this pilot study demonstrated that the biofilm-producing *P. aeruginosa* was killed more effectively when N-acetyl cysteine was added to ciprofloxacin or Ciprodex®. This supports some clinical studies that suggest that patients given NAC have a better outcome. (Note: NAC has no antibiotic activity itself). The implications of this type of research could lead to improvements in the treatment of patients with chronic infections cause by these bacteria.

Today, clinical laboratories do not routinely or even exceptionally perform biofilm susceptibility testing. However, with the devices that are being produced, and the advances that are being made, this might soon become normal practice in the clinical laboratory. When that day comes, CMPT will be ready to provide EQA support.

Check the poster presented at CACMID on our website: http://cmpt.ca/pdf_publications/Biofilm_Poster_Montreal.pdf

The biofilm study was possible thanks to the support and collaboration of Dr. Brian Westerberg (Ear, Nose and Throat Department, UBC) and with the assistance of Dr. Robert Rennie, University of Alberta, Edmonton. The study was performed by Veronica Restelli and Inna Sekirov along with the full support of the CMPT staff.

INSIDE THIS ISSUE

COST OF POOR QUALITY

by Dr. Michael Noble

In our course [Laboratory Quality Management] we emphasize that Quality Managers ignore the economics of Quality at their peril.

Quality, as far as most enterprises (especially hospital and laboratories) see it, is a necessary but unbalanced cost centre; money out with no financial return. Many have written on the subject and many have talked about looking at the costs of Prevention and Assessment (as input costs) and costs of finding and addressing Internal and External failure (as output). The problem is that CEOs and accountants only get to see the input costs (quality control, safety equipment, proficiency testing, accreditation, quality salaries), but they never see the savings on reduced error. Big mistake.

We have been looking at some of those failure (output) costs as measured in time. Preliminary data shows that an average error takes less than a minute to create, but can cost over 90 minutes to fix. Our preliminary average is 116 minutes, and is likely to go up rather than down. When the smoke clears, I anticipate that the mean will be much closer to 200 minutes, so by virtue of a quality system you prevent three errors a day, you save approximately the time of one person every day.

For a more systematic approach, there is a very readable article entitled "The ISO Methodology - assessing the economic benefits of standards". (Gurundino and Hilb. ISO Focus June 2010) which provides an approach to assessing impact.

Here is a valuable number for your pocket: "...the impact from standards ranges from 0.15% to 3.0% of turnover." This may seem like small potatoes, but for a tertiary care medical laboratory, that comes to between $150,000 and $3,000,000 per year. If that is true, those are the kind of numbers that guarantee a quality team salary for a long time.

For those without access as ISO members, they recommend contacting ISO (weissinger@iso.org) to get access to the Resources section. You have to be from an academic, or research centre, or a company.

http://www.iso.org/iso/iso-focus-plus_index/iso-focusplus_2010/iso-focusplus_2010-06.htm

"Cost of poor quality" was posted on "Making Medical Lab Quality Relevant," a blog by Dr. Noble on July 14, 2010. For more articles on Laboratory Quality please check the site: www.medicallaboratoryquality.com/

Paetzold Health Education Centre, Vancouver General Hospital
890 West 12th Avenue, Vancouver, British Columbia

ACTIVITIES	MEETING THEMES
Plenary presentations	Quality Management in the medical laboratory
Workshops	Working with Quality Partners
Discussions	Mutual Opportunities in International Quality Programs
Poster & podium presentations	Measuring the economic benefits of Quality

POLQM Quality Weekend Workshop website: www.polqmweekendworkshop.ca

M102-2 *E. coli*, ESBL positive strain

In 2010, CMPT sent an ESBL (Extended Spectrum β-lactamase) positive *E. coli* strain as a PT challenge to test the ability of participant laboratories to detect this resistance mechanism and to discuss the new guidelines for cephalosporin breakpoints published by CLSI in January 2010.

Here are the main points of the discussion:

The new guidelines would not significantly change the overall number of strains that would be reported as resistant to the third generation cephalosporins. However, the advantage of these new breakpoints is that it will not be necessary to confirm the ESBL result with a clavulanic acid disk test or a combination E-test.

As many of these strains now contain more than one resistance mechanism, including both an ESBL and an ampC determinant, it does not really matter if one or both mechanisms are in play but that the isolate will still be resistant clinically to all the third generation cephalosporin agents.

Most of the automated systems now have, or will soon have, algorithms to identify the presence of these resistance determinants and to flag the isolate as resistant to these antimicrobials.

Laboratories that use automated systems for their reporting algorithms, should wait until their system can generate the appropriate new breakpoints, and then make the change after consultation with their attending physicians.

One issue that is now generating discussion is whether an isolate testing 'S' for one third generation cephalosporin and 'R' for another (e.g., cefotaxime being 'R' and ceftazidime 'S') can be reported as tested, with (or even without) a warning about the possibility of an ESBL.

Until the controversy is resolved, it is prudent to identify such a strain as being resistant to both agents, since these are likely substrate differences that the phenotypic test may not be sensitive enough to detect. If one did report as tested, a note should be attached to indicate the possibility of clinical failure, and that the susceptible agent should not be used alone for treatment.

M103-1 *Providencia stuartii*, Catheter urine

Overall the participants performed well in the identification and susceptibility testing portions for this microorganism.

Reported susceptibility test results for gentamicin varied: 53 participants (55%) reported "Susceptible", 36 (37%) reported "Resistant", and 8 (8%) reported "Intermediate". These results suggest lack of clarity on how to report susceptiblity results for gentamicin in this organism.

***P. stuartii* is considered intrinsically resistant to gentamicin and tobramycin and should be reported as resistant regardless of the in-vitro susceptibility results.**

All *Providencia* spp. produce a chromosomal AAC(2')-Ia enzyme. Some isolates express the enzyme poorly and can appear susceptible *in vitro*.

This fact apparently isn't well known, therefore, this is an opportunity for laboratories to adjust their reporting protocol for this organism if necessary.

For more on this, please go to www.eucast.org/expert_rules/

GET CONNECTED

CMPT'S INTERNATIONAL EQA PROGRAM

In June 2011, CMPT will be providing training in EQA to Martin M. Matu and Stephen Munene from the African Medical & Research Foundation, Kenya

Upcoming events

JUNE 2011

CQI: An Essential Building Block in a Quality Management System

June 16 • 1:00–2:00 PM Eastern (US) Time

CLSI-APHL Teleconference Series: www.clsi.org/Content/NavigationMenu/Education/Teleconferences/June_16_2011.htm

UBC Program Office Quality Weekend Workshop

June 17 - 19, 2011 Vancouver, Canada

More information: www.polqmweekendworkshop.ca

61st Annual Conference of the Canadian Society of Microbiologists

June 20 - 23, 2011 St John's ,Newfoundland, Canada

More information: www.mun.ca/csm2011/index.html

4th Congress of European Microbiologists FEMS

June 26 - 30, Geneva, Switzerland

More information: www.fems-microbiology.org/website/nl/page142.asp

SEPTEMBER 2011

16th International Symposium on Health-Related Water Microbiology, WaterMicro 2011

September 18 - 23, 2011 Rotorua, New Zealand

More information: www.hrwm2011.org

ABOUT CONNECTIONS

"Connections" is published quarterly by CMPT and is aimed to the Micribiology Laboratory staff.

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Connections is available online:

www.cmpt.ca/newsletter_connections.html

We want to hear from you.

Have an idea for an article? Is there a topic you'd like to see covered? Do you have any questions or want to announce an event? Drop us a line.

Don't like something we're doing? Let us know.

POLQM Laboratory Quality Management recertification opportunities

The Program Office for Laboratory Quality Management (POLQM) is planning to offer a Recertification Program for Laboratory Quality Management graduates.

Why recertify?

As the profession's knowledge base continues to expand rapidly and new insights and practices develop, it is essential for laboratory managers to maintain their level of expertise and knowledge. The POLQM recertification program is an opportunity for individuals, previously certified by the UBC Certification Course for Laboratory Quality Management, to update their certificate.

There would be two ways of getting recertified:

- through examination only (Next exam: June 1, 2011)

- or by taking the updated 20 week course a second time at a discounted cost

Interested? Send us an email to ubc.poqlm.service@gmail.com for more information.